

Complete Summary

GUIDELINE TITLE

Prevention of deep vein thrombosis.

BIBLIOGRAPHIC SOURCE(S)

Blondin M. Prevention of deep vein thrombosis. Iowa City (IA): University of Iowa Gerontological Nursing Research Center, Research Dissemination Core; 1999. 31 p. [56 references]

COMPLETE SUMMARY CONTENT

SCOPE

METHODOLOGY - including Rating Scheme and Cost Analysis

RECOMMENDATIONS

EVIDENCE SUPPORTING THE RECOMMENDATIONS

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

QUALIFYING STATEMENTS

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT

CATEGORIES

IDENTIFYING INFORMATION AND AVAILABILITY

SCOPE

DISEASE/CONDITION(S)

Deep vein thrombosis (DVT)

GUIDELINE CATEGORY

Prevention

Risk Assessment

CLINICAL SPECIALTY

Geriatrics

Nursing

Surgery

INTENDED USERS

Advanced Practice Nurses

Nurses

Physicians

GUIDELINE OBJECTIVE(S)

To identify a standard method by which to assess the elderly surgical patient for risk factors for the development of deep vein thrombosis (DVT).

TARGET POPULATION

Elderly surgical patients

INTERVENTIONS AND PRACTICES CONSIDERED

1. Risk factor assessment for thrombosis
2. Prophylactic measures including, early ambulation post-operatively, graduated compression stockings (GCS), intermittent pneumatic compression devices (IPCD), foot pumps, anticoagulant therapy
3. Patient education

MAJOR OUTCOMES CONSIDERED

- Adequacy of prophylactic measures based on the deep vein thrombosis (DVT) prevention program
- Protocol compliance

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The guideline developer performed searches of electronic databases, including Medline (U.S. National Library of Medicine) and the Cumulative Index to Nursing and Allied Health Literature (CINAHL), and performed handsearches of published literature.

NUMBER OF SOURCE DOCUMENTS

Greater than 100 source documents

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

This guideline was reviewed by a pair of external reviewers: (1) Joseph A. Caprini, MD, MS, FACS, RUT, Louis W. Biegler Professor of Surgery, Northwestern University Medical School and Director of Surgical Research, Evanston Northwestern Healthcare; (2) Beverly Morris, RN, CNP, Director, Research and Development, Division of Orthopedic Surgery, La Jolla, California.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

1. Risk factor assessment should be completed for every patient upon admission to the hospital for all unplanned admissions.
2. Risk factor assessment should be completed pre-operatively for every patient whose surgical admission is planned (Caprini et al., 1991).
3. Thorough education is provided for patient and family members regarding the importance of deep vein thrombosis (DVT) prophylaxis and their role in assuring compliance. Provide written as well as verbal information regarding the basic physiology about how blood flows to and from the heart, and the role of muscles in this process. Empower patients to be active participants in exercise, ambulation (if not contraindicated), and in the use of mechanical devices (Blondin & Titler, 1996).

4. Appropriate prophylaxis should be initiated as soon as medically possible for unplanned admissions (Hamilton, Hull, & Pineo, 1994).
5. Appropriate prophylaxis should be initiated preoperatively for planned same-day admissions or on admission to the inpatient unit for those patients admitted on any day preceding their scheduled surgery (Hamilton, Hull, & Pineo, 1994).
6. Patients arriving to nursing units without orders for DVT prophylaxis: nursing staff should immediately notify responsible physician.
7. All patients should have a plan for active and passive lower extremity activity unless contraindicated including flexion and extension of the ankle (ankle pumps), knees and hips. Involve Physical Therapy as appropriate. Provide written instructions, with pictures as well as a demonstration.
8. Early ambulation for all patients if not contraindicated by condition.
9. Graduated Compression Stockings (GCS) for all patients unless contraindicated by ischemic vascular disease.
10. If the following regimens are ordered, follow these guidelines:
 - a. Graduated Compression Stockings (GCS): wear at all times except when removed for skin care or bathing. Replace within 30 minutes (Sigel et al., 1975).
 - i. Measure each patient, do not "guess" size
 - ii. Consider knee high GCS for patients unable to wear thigh high due to size or injury
 - iii. Avoid stockings that threaten a "garter" effect
 - b. Intermittent Pneumatic Compression Devices (IPCD): wear at all times when inactive. This includes when the patient is in bed, resting in the chair, or at lengthy tests.
 - i. Measure each patient, do not "guess" size
 - ii. Consider knee high IPCD for patients unable to wear thigh high due to size or injury
 - c. Foot Pumps: wear at all times when inactive. This includes when patient is in bed, resting in the chair, or at lengthy tests.
 - d. Anticoagulant Therapy per physician order.
 - e. Continue GCS use after discharge for period of relative immobility (Caprini, Scurr, & Hasty, 1988; Clagett & Reisch, 1988). This definition is variable and needs to be determined at your institution. A good rule of thumb is to continue GCS until the patient is "up more than down".
 - f. Continue anticoagulant therapy after discharge per MD order.
11. Monitor for clinical signs and symptoms of DVT (50% confidence) such as calf pain or tenderness, palpable cords, increased circumference, positive Homan's sign (Hamilton, Hull, & Pineo, 1994). However the clinician should be aware that 50% of the clinical signs and symptoms above are not sensitive.
12. Compliance with mechanical prophylaxis is the responsibility of the nursing staff and the patient.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

[References open in a new window](#)

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The recommendations were based primarily on a comprehensive review of published reports.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Prevention of deep vein thrombosis (DVT)
- Prevention of pulmonary embolism (PE)
- Decreased hospitalizations associated with DVT and PE
- Decreased morbidity and mortality associated with DVT and PE

Subgroups Most Likely to Benefit:

- Surgical patients > 40 years of age undergoing a major operation
- Surgical patients > 60 years of age undergoing any operation
- Patients confined to bed prior to or anticipated after surgery
- Patients with a previous history of deep vein thrombosis (DVT)
- Patients with a history of varicose veins
- Patients who will undergo an operation over 2 hours
- Patients who will undergo a planned pelvic or total joint replacement surgery
- Patients who have incurred a pelvic or long bone fracture
- Patients with a family history of DVT
- Patients in hypercoagulable states
- Patients with multiple trauma

POTENTIAL HARMS

Sound clinical judgment must be used when choosing treatment modalities:

1. Pharmacological prophylaxis: potential harm is bleeding.
2. Mechanical prophylaxis: potential harms are:
 - a. skin breakdown or irritation;
 - b. ineffectiveness of devices from ill fitting or poor compliance.

Subgroups Most Likely to be Harmed:

Potential in all patient populations

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

This research-based practice is a general guideline. Patient care continues to require individualization based on patient needs and requests.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Blondin M. Prevention of deep vein thrombosis. Iowa City (IA): University of Iowa Gerontological Nursing Research Center, Research Dissemination Core; 1999. 31 p. [56 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1999 Jun 10

GUIDELINE DEVELOPER(S)

University of Iowa Gerontological Nursing Interventions Research Center,
Research Dissemination Core - Academic Institution

SOURCE(S) OF FUNDING

This protocol was developed under funding provided by Grant No. P30NRO3979,
National Institute of Nursing Research, National Institutes of Health (NIH).

GUIDELINE COMMITTEE

University of Iowa Gerontological Nursing Interventions Research Center Research
Dissemination Core

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Author: Martha Blondin, RN, MSN.

Series Editor: Marita G. Titler, PhD, RN, FAAN.

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

An update is not in progress at this time.

GUIDELINE AVAILABILITY

Electronic copies: Not available at this time.

Print copies: Available from the University of Iowa Gerontological Nursing Interventions Research Center, Research Dissemination Core, 4118 Westlawn, Iowa City, IA 52242. For more information, please see the [University of Iowa Gerontological Nursing Interventions Research Center Web site](#).

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on November 19, 1999. The information was verified by the guideline developer as of January 20, 2000.

COPYRIGHT STATEMENT

This summary is based on content contained in the original guideline, which is subject to terms as specified by the guideline developer. These summaries may be downloaded from the NGC Web site and/or transferred to an electronic storage and retrieval system solely for the personal use of the individual downloading and transferring the material. Permission for all other uses must be obtained from the guideline developer by contacting the University of Iowa Gerontological Nursing Intervention Research Core.

© 1998-2004 National Guideline Clearinghouse

Date Modified: 11/8/2004

